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PTO/SB/05 (4/98)
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	P04589USO
First Inventor or Application Identifier	James A. Creighton
Title	Bi-Directional Cutting Or Trimming...
Express Mail Label No.	EL688892641US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

- ☒ * Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
- ☒ Specification [Total Pages
(preferred arrangement set forth below)
 - Descriptive title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
- ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets
a. ☒ Newly executed (original or copy)
b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 16 completed)
i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
- Oath or Declaration [Total Pages
a. ☒ Newly executed (original or copy)
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i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

* NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

- ☐ Microfiche Computer Program (Appendix)
- Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - ☐ Computer Readable Copy
 - ☐ Paper Copy (identical to computer copy)
 - ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

- ☐ Assignment Papers (cover sheet & document(s))
- ☐ 37 C.F.R. § 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
- ☐ English Translation Document (if applicable)
- ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Citations
- ☐ Preliminary Amendment
- ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
- ☒ * Small Entity Statement(s) ☐ Statement filed in prior application, Status still proper and desired (PTO/SB/09-12)
- ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
- ☐ Other:

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

<input type="checkbox"/> Continuation	<input type="checkbox"/> Divisional	<input type="checkbox"/> Continuation-in-part (CIP)	of prior application No: _____ / _____
Prior application information: Examiner _____		Group / Art Unit: _____	

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

<input type="checkbox"/> Customer Number or Bar Code Label	22885	or <input checked="" type="checkbox"/> Correspondence address below
(Insert Customer No. or Attach bar code label here)		

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Name (Print/Type)	Michael G. Voorhees	Registration No. (Attorney/Agent)	25,715
Signature	Michael G. Voorhees	Date	9-20-2000

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I hereby certify that this paper and the documents referred to as enclosed therein are being deposited with the United States Postal Service on the date shown below in an envelope as "Express Mail Post Office to Addressee" Mailing Label Number **EL688892641US** addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

Sept. 20, 2000
Date

Dianne L. McGarey
Dianne L. McGarey



0966733-092000

FEE TRANSMITTAL for FY 2000

Patent fees are subject to annual revision.
Small Entity payments must be supported by a small entity statement,
otherwise large entity fees must be paid. See Forms PTO/SB/09-12.
See 37 C.F.R. §§ 1.27 and 1.28.

TOTAL AMOUNT OF PAYMENT (\$) 345.00

Complete if Known

Application Number
Filing Date
First Named Inventor James A. Creighton
Examiner Name
Group / Art Unit
Attorney Docket No. P04589USO

METHOD OF PAYMENT (check one)

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number 26-0084
Deposit Account Name

☒ Charge Any Additional Fee Required
Under 37 CFR §§ 1.16 and 1.17

2. ☒ Payment Enclosed:
☒ Check ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
101 690	201 345	Utility filing fee	\$345
106 310	206 155	Design filing fee	
107 480	207 240	Plant filing fee	
108 690	208 345	Reissue filing fee	
114 150	214 75	Provisional filing fee	

SUBTOTAL (1) (\$) 345.00

2. EXTRA CLAIM FEES

Extra Claims Fee from below Fee Paid
Total Claims 20 -20** = 0 X = 0
Independent Claims 3 -3** = 0 X = 0
Multiple Dependent =

**or number previously paid, if greater; For Reissues, see below

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
103 18	203 9	Claims in excess of 20	
102 78	202 39	Independent claims in excess of 3	
104 260	204 130	Multiple dependent claim, if not paid	
109 78	209 39	** Reissue independent claims over original patent	
110 18	210 9	** Reissue claims in excess of 20 and over original patent	

SUBTOTAL (2) (\$) .00

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
105 130	205 65	Surcharge - late filing fee or oath	
127 50	227 25	Surcharge - late provisional filing fee or cover sheet	
139 130	139 130	Non-English specification	
147 2,520	147 2,520	For filing a request for reexamination	
112 920*	112 920*	Requesting publication of SIR prior to Examiner action	
113 1,840*	113 1,840*	Requesting publication of SIR after Examiner action	
115 110	215 55	Extension for reply within first month	
116 380	216 190	Extension for reply within second month	
117 870	217 435	Extension for reply within third month	
118 1,360	218 680	Extension for reply within fourth month	
128 1,850	228 925	Extension for reply within fifth month	
119 300	219 150	Notice of Appeal	
120 300	220 150	Filing a brief in support of an appeal	
121 260	221 130	Request for oral hearing	
138 1,510	138 1,510	Petition to institute a public use proceeding	
140 110	240 55	Petition to revive - unavoidable	
141 1,210	241 605	Petition to revive - unintentional	
142 1,210	242 605	Utility issue fee (or reissue)	
143 430	243 215	Design issue fee	
144 580	244 290	Plant issue fee	
122 130	122 130	Petitions to the Commissioner	
123 50	123 50	Petitions related to provisional applications	
126 240	126 240	Submission of Information Disclosure Stmt	
581 40	581 40	Recording each patent assignment per property (times number of properties)	
146 690	246 345	Filing a submission after final rejection (37 CFR § 1.129(a))	
149 690	249 345	For each additional invention to be examined (37 CFR § 1.129(b))	

Other fee (specify) _____

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$) 0.00

SUBMITTED BY

Name (Print/Type) Michael G. Voorhees	Registration No. (Attorney/Agent) 25,715	Telephone 515-288-3667
Signature <i>Michael G. Voorhees</i>	Date 9-20-2000	

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Applicant or Patentee: James A. Creighton and Dwight A. Axtell
Serial or Patent No: _____
Filed or Issued: _____
For: Bi-Directional Cutting Or Trimming Knife And Method For Using Same

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) AND 1.27(b)) - INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.97(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled Bi-Directional Cutting Or Trimming Knife And Method For Using Same described in:

☒ the specification filed herewith
☐ application Serial No. _____, filed _____
☐ Patent No. _____, issued _____

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, grant, conveyed or licensed or am under an obligation under contract or law to assign, grant, convey or license any rights in the invention is listed below:

☐ no such person, concern or organization
☒ persons, concerns or organization listed below*

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

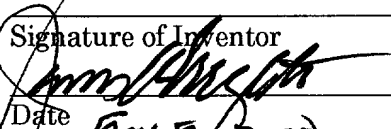
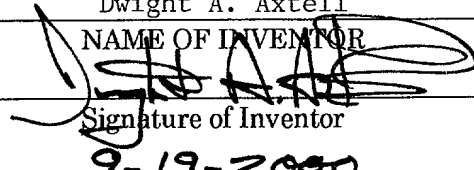
FULL NAME Amatco USA, Inc.
ADDRESS 5475 N.W. Beaver Avenue, Johnston, Iowa 50131
☐ INDIVIDUAL ☒ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME _____
ADDRESS _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME _____
ADDRESS _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of payment, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

James A. Creighton	Dwight A. Axtell	
NAME OF INVENTOR	NAME OF INVENTOR	NAME OF INVENTOR
		
Signature of Inventor	Signature of Inventor	Signature of Inventor
Date <u>5-15-2000</u>	Date <u>9-19-2000</u>	Date

Applicant or Patentee: James A. Creighton and Dwight A. Axtell
Serial No. or Patent No: _____
Filed or Issued: _____
For: Bi-Directional Cutting Or Trimming Knife And Method For Using Same

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) AND 1.27(c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am

- ☐ the owner of the small business concern identified below:
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN Amatco USA, Inc.
ADDRESS OF CONCERN 5475 N.W. Beaver Avenue, Johnston, Iowa 50131

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled Bi-Directional Trimming Knife and Method For Using Same by inventor(s) Creighton and Axtell, described in

☒ the specification filed herewith.

☐ application Serial No. _____, filed _____

☐ Patent No. _____, issued _____

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights in the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

**NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27).*

FULL NAME _____

ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of payment, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME AND TITLE OF PERSON SIGNING James A. Creighton, President
ADDRESS OF PERSON SIGNING 5475 N.W. Beaver Avenue, Johnston, Iowa 50131

SIGNATURE James A. Creighton DATE 9-19-2000

APPLICATION FOR UNITED STATES PATENT

Inventors: James A. Creighton
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Des Moines, Iowa 50310

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Title of Invention: **Bi-Directional Cutting Or Trimming
Knife And Method For Using Same**

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000250-229960

INVENTORS: James A. Creighton
Dwight A. Axtell

TITLE: **Bi-Directional Cutting Or Trimming Knife
And Method For Using Same**

BACKGROUND OF THE INVENTION

The present invention relates to a bi-directional cutting or trimming knife and method for using same.

Trimming knives have been used to trim the edges of a stack of sheet members. An example of such a use is the trimming in a bindery of the edges of bound books. Trimming knives for accomplishing this function generally move in a downward direction and in a lateral direction with respect to the sheet members being trimmed. However, prior art trimming knives generally are capable of moving only in a single lateral direction during the trimming process.

Cutting knives have been used to cut the edges of a stack of unbound sheet members. Cutting knives, like trimming knives, have generally been capable of moving only in a single lateral direction.

Therefore a primary object of the present invention is the provision of a bi-directional cutting or trimming knife and method for using same.

A further object of the present invention is the provision of a cutting or trimming knife which can be moved in a first lateral direction or in a second lateral direction during the downward movement of the knife towards the sheet members being trimmed.

A further object of the present invention is the provision of a cutting or trimming knife which is bi-directional, but which is rigidly held in proper alignment during its trimming action.

A further object of the present invention is the provision of a cutting or trimming knife which can be easily

and rapidly transferred from a first position to be movable in one lateral direction during one trimming or cutting cut, to a second position movable in another lateral direction during another trimming or cutting cut.

A further object of the present invention is the provision of a cutting or trimming knife that will not dull as quickly due to full use of the length of the knife edge.

A further object of the present invention is the provision of a bi-directional cutting or trimming knife which is economical to manufacture, durable in use, and efficient in operation.

SUMMARY OF THE INVENTION

The foregoing objects may be achieved by an apparatus for trimming or cutting a stack of sheet members having edges to be trimmed and being supported on a cutting table. The apparatus includes an elongated knife having a cutting edge extending along the cutting axis of the knife. A knife supporting frame is connected to the cutting table and a guide mechanism mounts the knife to the supporting frame for movement of the knife from a start position wherein the knife is positioned spaced from the cutting table and the sheet members to a cut position wherein the knife moves towards the cutting table and cuts or trims the stack of sheet members. The guide mechanism is movable on the frame to a first guide position causing the knife to move in a first direction relative to the cutting edge axis when moving from its starting position to its cut position. The guide mechanism is movable on the frame to a second guide position causing the knife to move in a second direction opposite from the first direction when moving from its start position to its cut position.

The guide mechanism may be a linkage which pivots during movement of the knife between its start and cut positions. However other guide mechanisms can also be used such as slots

Figure 7 is a view similar to Figure 6, but showing the knife in its lowered position.

Figure 8 is an enlarged detail view of the locator assembly of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings the numeral 10 generally designates the trimming machine of the present invention. While machine 10 shows the preferred embodiment, variations in the various components of the machine may be made without detracting from the invention.

Machine 10 includes a cutting table 12 having a back edge 14 and having a table recess 16 formed in its upper surface. Table slot 18 is contained within the table recess 16 and receives a book holder 20. Book holder 20 includes a holder frame 22 which supports a book holder plate 24 on the end of a rod extending from pneumatic cylinder 26. A book 28 is shown being held by the holder plate 24. Book 28 includes a spine 30. The book holder 20 is capable of holding the book 24 and moving within slot 18 to present the various edges of the board adjacent the back edge 14 of the cutting table. Device 20 is also capable of rotating about a vertical axis to present various edges of the book to the back edge 14 of the cutting table.

Extending upwardly above table 12 is a support frame 32 which is comprised of a first vertical frame member 34, a second vertical frame member 36, and a third vertical frame member 38. Members 34, 36, 38 are spaced apart so as to create a knife guide space 40 and a clamp guide space 42 therebetween. Knife guide space 40 and clamp guide space 42 are shown to be formed as spaces between spaced apart plates, but they also could be vertical grooves on the opposing inner faces of vertical legs.

Within the knife guide space 40 is a knife holder 44 which is capable of vertical sliding movement within the knife guide space 40. Within the clamp guide space 42 is a

cutting clamp 46 which is capable of sliding vertically upwardly and downwardly. A pair of clamp cylinders 49 are connected to the cutting clamp 46 for moving it from an elevated position to a lowered position. In the lowered position shown in Figure 1, the cutting clamp 46 clamps the book 28 against the upper surface of the table 12 and holds it in place for the trimming operation.

An elongated cross frame member 48 is mounted at the upper ends of the first and second vertical frame members 34, 36. Attached to the cross frame member 48 are a first guide plate 50, a second guide plate 51, a third guide plate 52, and a fourth guide plate 53. Each of the guide plates 50, 51, 52, 53 include an arcuate slot 56 therein. The cross member 48 includes a pair of elongated floor slots 58, 60 shown in Figures 2 and 3.

A linkage mechanism for supporting and controlling the movement of the knife 44 is comprised of a horizontal base link or transfer arm 62, a side link 64, and a second side link 66. As can best be seen in Figures 4 and 6, the two side links 64, 66 are pivoted at their upper ends to the opposite ends of horizontal base link or transfer arm 62 for pivotal movement about pivot points 68, 70. The lower ends of the side links 64, 66 are pivoted to the opposite ends of the knife holder 44 for pivotal movement about pivotal axes 72, 74. First, second, third and fourth guide followers or bearings 75, 76, 77, 78 (Figures 2 and 3) are positioned within the slots 56 of the guide plates 50, 51, 52, 53 respectively. These guide followers 75, 76, 77, 78 are mounted for rotational movement on a first pin 80, and a second pin 82 as can be seen in Figures 2 and 3.

A pneumatic cylinder 88 is mounted to the cross frame member 48 by means of a cylinder pin 84 extending through a hole in a cylinder mount 86 and a cylinder clevis 90. Extending from the cylinder 88 is a cylinder rod 92 (Figure 3) having a rod clevis 94 on the end thereof. The rod clevis

knife holder 44 to move downwardly and to the right in the direction of arrow 114 to engage the book 28 and trim the edges of the sheet members in that book. As can be seen in Figures 6 and 7 this movement of the knife is downwardly and to the right into the spine 30 of the book.

The apparatus of the present invention provides a bi-directional knife which can be moved from a first position wherein the knife moves downwardly and to the left in the direction of arrow 112 (Figure 5) to a second position shown in Figure 6 where the knife moves downwardly and to the right in the direction of arrow 114 (Figure 7). This enables the trimming apparatus to use a single knife for cutting the various edges of the book whereas prior art devices required two or more knives to cut the edges so as to insure that the cutting movement is always into the spine 30.

One advantage of a bi-directional knife is that it will have a prolonged wear life over that obtained by prior art single directional knives. The book or other stack of sheet members usually is about one-half the length of the knife. A single directional knife will always use the same half of the blade to cut the sheet members. But the bi-directional knife of the present invention can be configured to use two separate and distinct portions of the knife edge for its two bi-directional modes, thereby doubling the wear life of the blade.

In the drawings and specification there has been set forth a preferred embodiment of the invention, and although specific terms are employed, these are used in a generic and descriptive sense only and not for purposes of limitation. Changes in the form and the proportion of parts as well as in the substitution of equivalents are contemplated as circumstances may suggest or render expedient without departing from the spirit or scope of the invention as further defined in the following claims.

moving said linkage mechanism between said between said first and second guide positions.

5.

Apparatus according to claim 4 wherein said linkage power means comprises an extensible fluid cylinder.

6.

Apparatus according to claim 4 wherein said linkage power means is connected to said base link and said support frame.

7.

Apparatus according to claim 4 wherein said base link, said first and second links, and said knife combine to form a parallelogram.

8.

Apparatus according to claim 7 and further comprising at least one guide track attached to said frame, and a track follower mounted on said mechanism and guided within said guide track for guided movement therein during movement of said linkage mechanism between said first and second guide positions.

9.

Apparatus according to claim 1 and further comprising a clamp for clamping said stack of sheet members to said table.

10.

Apparatus according to claim 9 and further comprising an extensible cutting cylinder connected to said knife for moving said knife between said start position and said cutting position.

11.

Apparatus according to claim 1 and further comprising a first stop member movable with said knife and a second stop member fixed to said frame, said first and second stop members engaging one another when said knife is in said cut position.

12.

Apparatus according to claim 11 wherein said first and second stop members retentively engage one another when said knife is in said cut position to hold said knife against movement when in said cut position.

13.

Apparatus for trimming or cutting a stack of sheet members supported on a cutting table, said apparatus comprising:
a support frame connected to said table and extending upwardly therefrom;
linkage mechanism comprising a base link and first and second side links pivotally connected to said base link and extending downwardly therefrom;
an elongated knife holder having an elongated knife with a cutting edge mounted thereto, and being pivotally connected to said first and second side links, whereby said base link, said first and second side links, and said knife holder form a collapsible parallelogram;
an extensible cylinder connected to said frame and to said knife holder for moving said knife from a start position spaced above said sheet members to a cut position engaging and cutting through said sheet members;
said base link being movable mounted to said support frame for movement from a first link position wherein said first and second links angle downwardly at an inclined first angle when said knife is in said start position to a second link position wherein said first and second links angle downwardly at an inclined second angle opposite from said first angle when said knife is in said start position.

14.

A method for using a knife having a longitudinal knife axis and a cutting edge to cut or trim a stack of sheet

members supported on a table and having at least first and second edges to be cut or trimmed, said method comprising: trimming or cutting said first edge of said stack by moving said cutting edge of said knife in a downwardly inclined direction extending both downwardly toward said first edge of said stack and laterally in a first lateral direction along said knife axis until said cutting edge engages and cuts through said stack of said sheet

members;

lifting said knife upwardly away from said stack of sheet members;

trimming or cutting said second edge of said stack by moving said cutting edge of said knife in a downwardly inclined direction extending both downwardly toward said second edge of said stack and laterally in a second lateral direction opposite from said first lateral direction until said cutting edge engages and cuts through said stack of sheet members.

15.

A method according to claim 14 wherein said stack of sheet members comprises a book having a spine edge extending between said first and second edges to be trimmed, said method comprising rotating said book 180 degrees between said trimming of said first and second edges of said stack, whereby said first and second lateral directions will both extend into said spine edge of said book.

16.

A method according to claim 15 and further comprising clamping said book to said table during said trimming of said first and second edges of said stack.

17.

A method according to claim 14 and further comprising a base link, a first side link and a second side link pivotally connected to said base link and said knife so as to create a collapsible parallelogram from said base link, said first and

second side links and said knife, said method comprising moving said base link in a direction parallel to said cutting edge of said knife from a first link position during said trimming of said first edge of said stack to a second link position during said trimming of said second edge of said stack.

18.

A method according to claim 17 and further comprising holding said knife stationary during said moving of said base link from said first link position to said second link position.

19.

A method according to claim 18 and further comprising using at least one guide track to guide a guide follower attached to said base link during movement of said base link from said first link position to said second link position.

20.

A method according to claim 19 and further comprising guiding a guide follower attached to said base link in an arcuate path during movement of said base link from said first link position to said second link position.

[illegible]

14

1. 1990年1-12月		2. 1991年1-12月		3. 1992年1-12月		4. 1993年1-12月		5. 1994年1-12月		6. 1995年1-12月		7. 1996年1-12月		8. 1997年1-12月		9. 1998年1-12月		10. 1999年1-12月		11. 2000年1-12月		12. 2001年1-12月		13. 2002年1-12月		14. 2003年1-12月		15. 2004年1-12月		16. 2005年1-12月		17. 2006年1-12月		18. 2007年1-12月		19. 2008年1-12月		20. 2009年1-12月		21. 2010年1-12月		22. 2011年1-12月		23. 2012年1-12月		24. 2013年1-12月		25. 2014年1-12月		26. 2015年1-12月		27. 2016年1-12月		28. 2017年1-12月		29. 2018年1-12月		30. 2019年1-12月		31. 2020年1-12月		32. 2021年1-12月		33. 2022年1-12月		34. 2023年1-12月		35. 2024年1-12月		36. 2025年1-12月		37. 2026年1-12月		38. 2027年1-12月		39. 2028年1-12月		40. 2029年1-12月		41. 2030年1-12月		42. 2031年1-12月		43. 2032年1-12月		44. 2033年1-12月		45. 2034年1-12月		46. 2035年1-12月		47. 2036年1-12月		48. 2037年1-12月		49. 2038年1-12月		50. 2039年1-12月		51. 2040年1-12月		52. 2041年1-12月		53. 2042年1-12月		54. 2043年1-12月		55. 2044年1-12月		56. 2045年1-12月		57. 2046年1-12月		58. 2047年1-12月		59. 2048年1-12月		60. 2049年1-12月		61. 2050年1-12月		62. 2051年1-12月		63. 2052年1-12月		64. 2053年1-12月		65. 2054年1-12月		66. 2055年1-12月		67. 2056年1-12月		68. 2057年1-12月		69. 2058年1-12月		70. 2059年1-12月		71. 2060年1-12月		72. 2061年1-12月		73. 2062年1-12月		74. 2063年1-12月		75. 2064年1-12月		76. 2065年1-12月		77. 2066年1-12月		78. 2067年1-12月		79. 2068年1-12月		80. 2069年1-12月		81. 2070年1-12月		82. 2071年1-12月		83. 2072年1-12月		84. 2073年1-12月		85. 2074年1-12月		86. 2075年1-12月		87. 2076年1-12月		88. 2077年1-12月		89. 2078年1-12月		90. 2079年1-12月		91. 2080年1-12月		92. 2081年1-12月		93. 2082年1-12月		94. 2083年1-12月		95. 2084年1-12月		96. 2085年1-12月		97. 2086年1-12月		98. 2087年1-12月		99. 2088年1-12月		100. 2089年1-12月		101. 2090年1-12月		102. 2091年1-12月		103. 2092年1-12月		104. 2093年1-12月		105. 2094年1-12月		106. 2095年1-12月		107. 2096年1-12月		108. 2097年1-12月		109. 2098年1-12月		110. 2099年1-12月		111. 2100年1-12月		112. 2101年1-12月		113. 2102年1-12月		114. 2103年1-12月		115. 2104年1-12月		116. 2105年1-12月		117. 2106年1-12月		118. 2107年1-12月		119. 2108年1-12月		120. 2109年1-12月		121. 2110年1-12月		122. 2111年1-12月		123. 2112年1-12月		124. 2113年1-12月		125. 2114年1-12月		126. 2115年1-12月		127. 2116年1-12月		128. 2117年1-12月		129. 2118年1-12月		130. 2119年1-12月		131. 2120年1-12月		132. 2121年1-12月		133. 2122年1-12月		134. 2123年1-12月		135. 2124年1-12月		136. 2125年1-12月		137. 2126年1-12月		138. 2127年1-12月		139. 2128年1-12月		140. 2129年1-12月		141. 2130年1-12月		142. 2131年1-12月		143. 2132年1-12月		144. 2133年1-12月		145. 2134年1-12月		146. 2135年1-12月		147. 2136年1-12月		148. 2137年1-12月		149. 2138年1-12月		150. 2139年1-12月		151. 2140年1-12月		152. 2141年1-12月		153. 2142年1-12月		154. 2143年1-12月		155. 2144年1-12月		156. 2145年1-12月		157. 2146年1-12月		158. 2147年1-12月		159. 2148年1-12月		160. 2149年1-12月		161. 2150年1-12月		162. 2151年1-12月		163. 2152年1-12月		164. 2153年1-12月		165. 2154年1-12月		166. 2155年1-12月		167. 2156年1-12月		168. 2157年1-12月		169. 2158年1-12月		170. 2159年1-12月		171. 2160年1-12月		172. 2161年1-12月		173. 2162年1-12月		174. 2163年1-12月		175. 2164年1	
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statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURES

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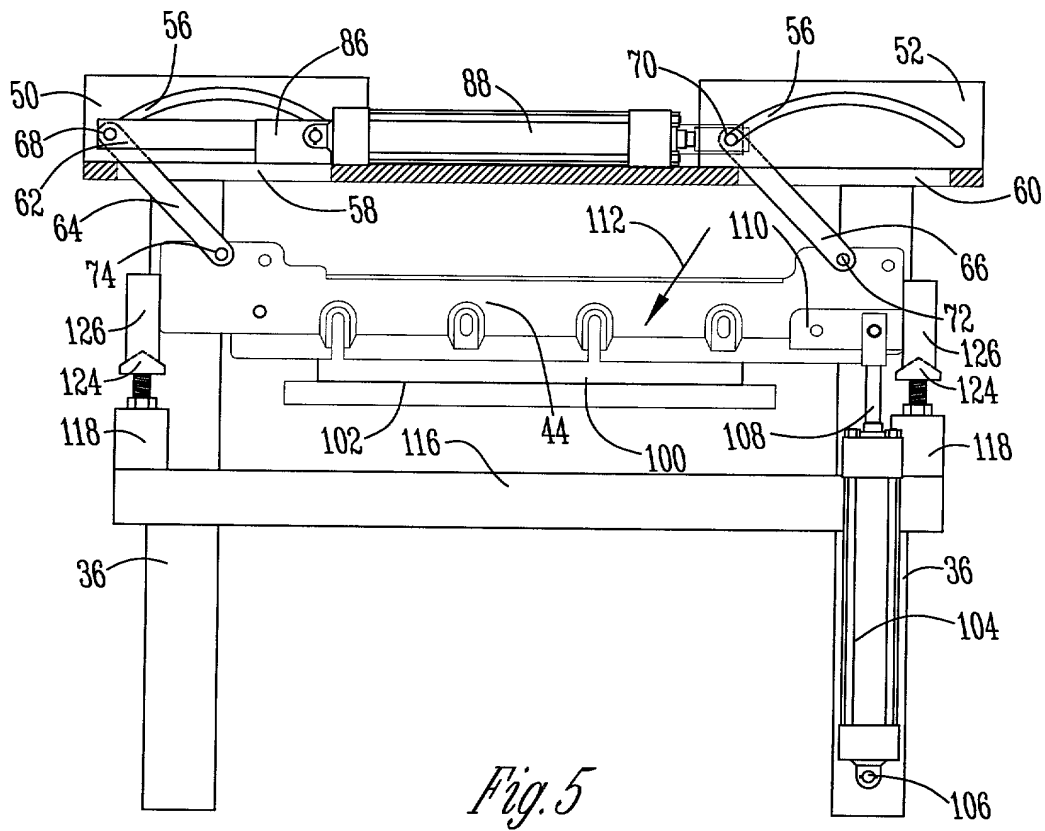
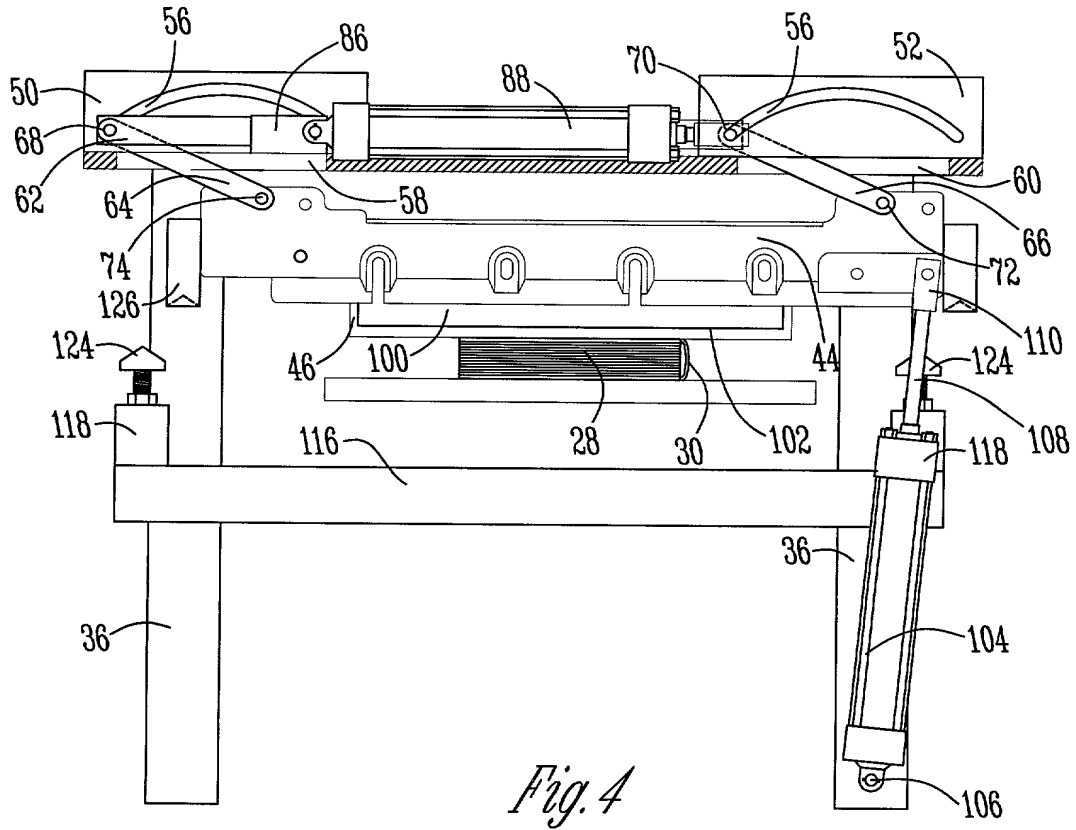
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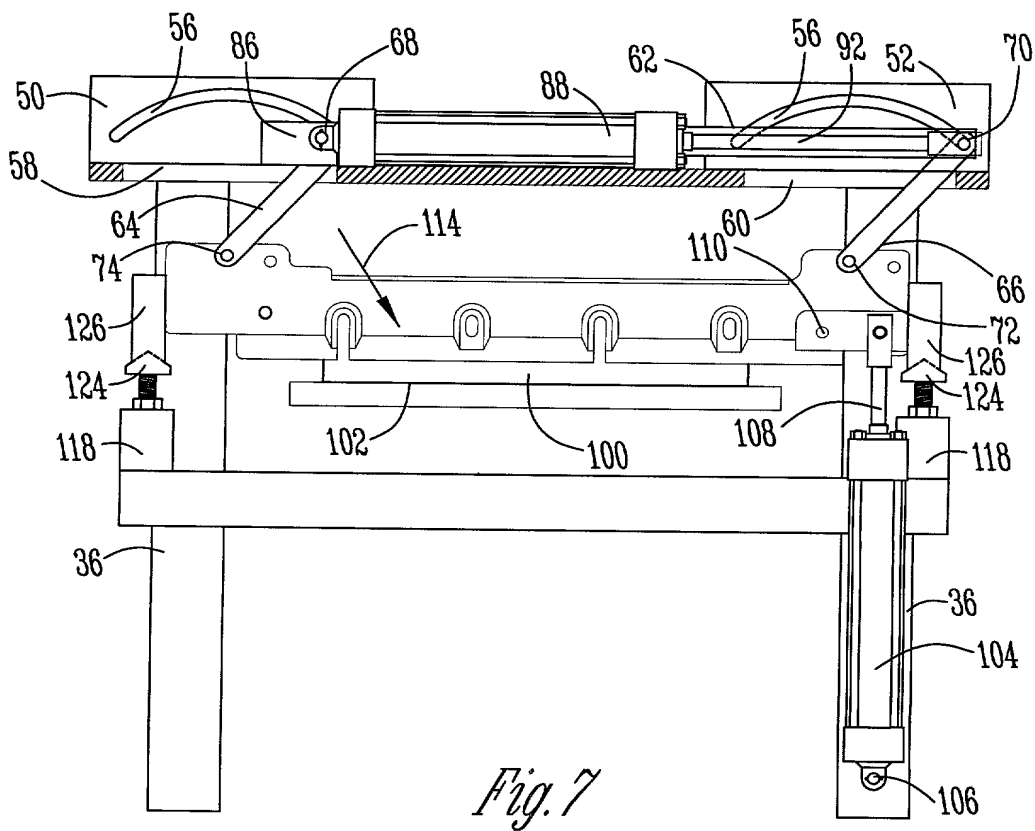
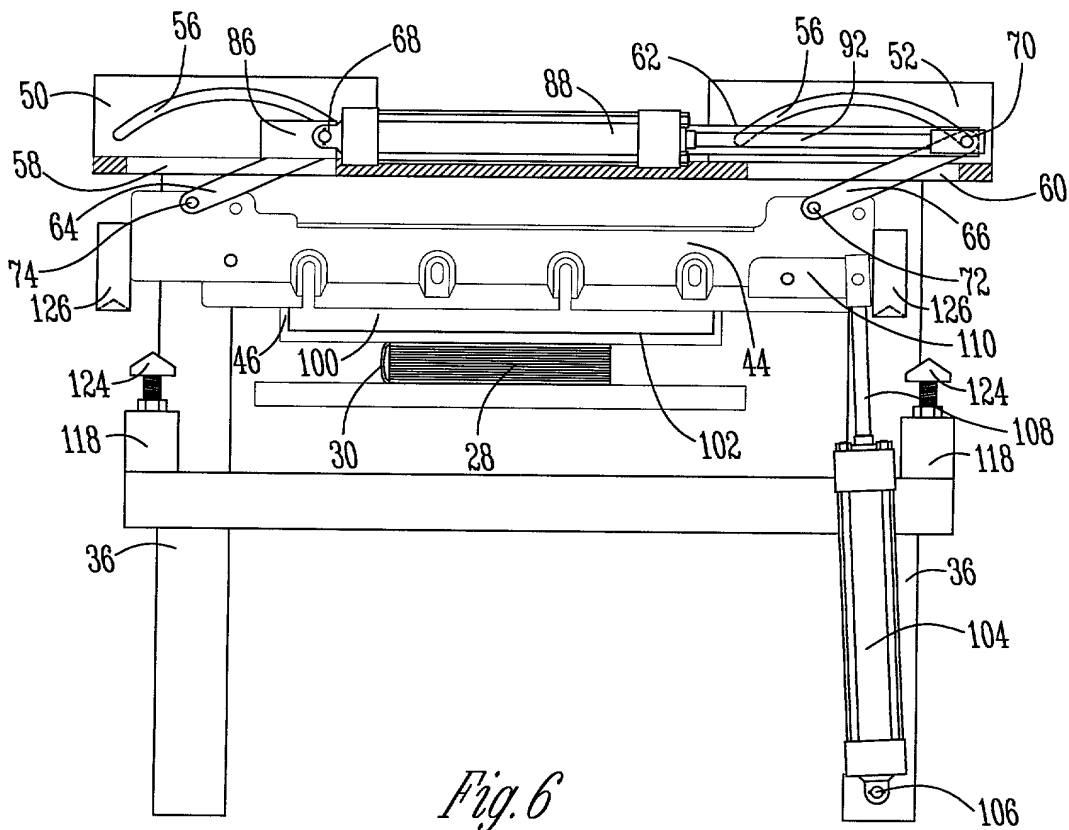
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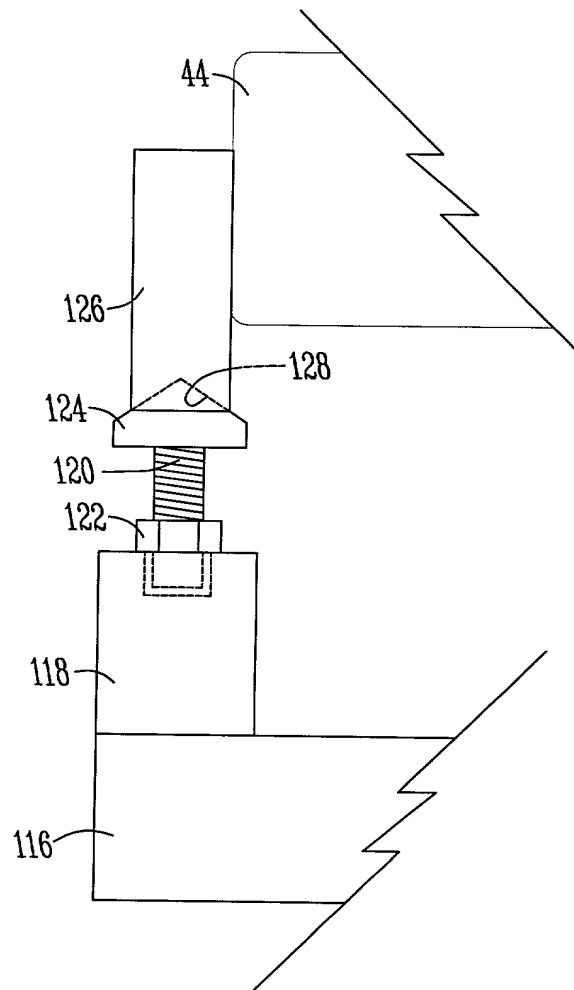


Fig. 8